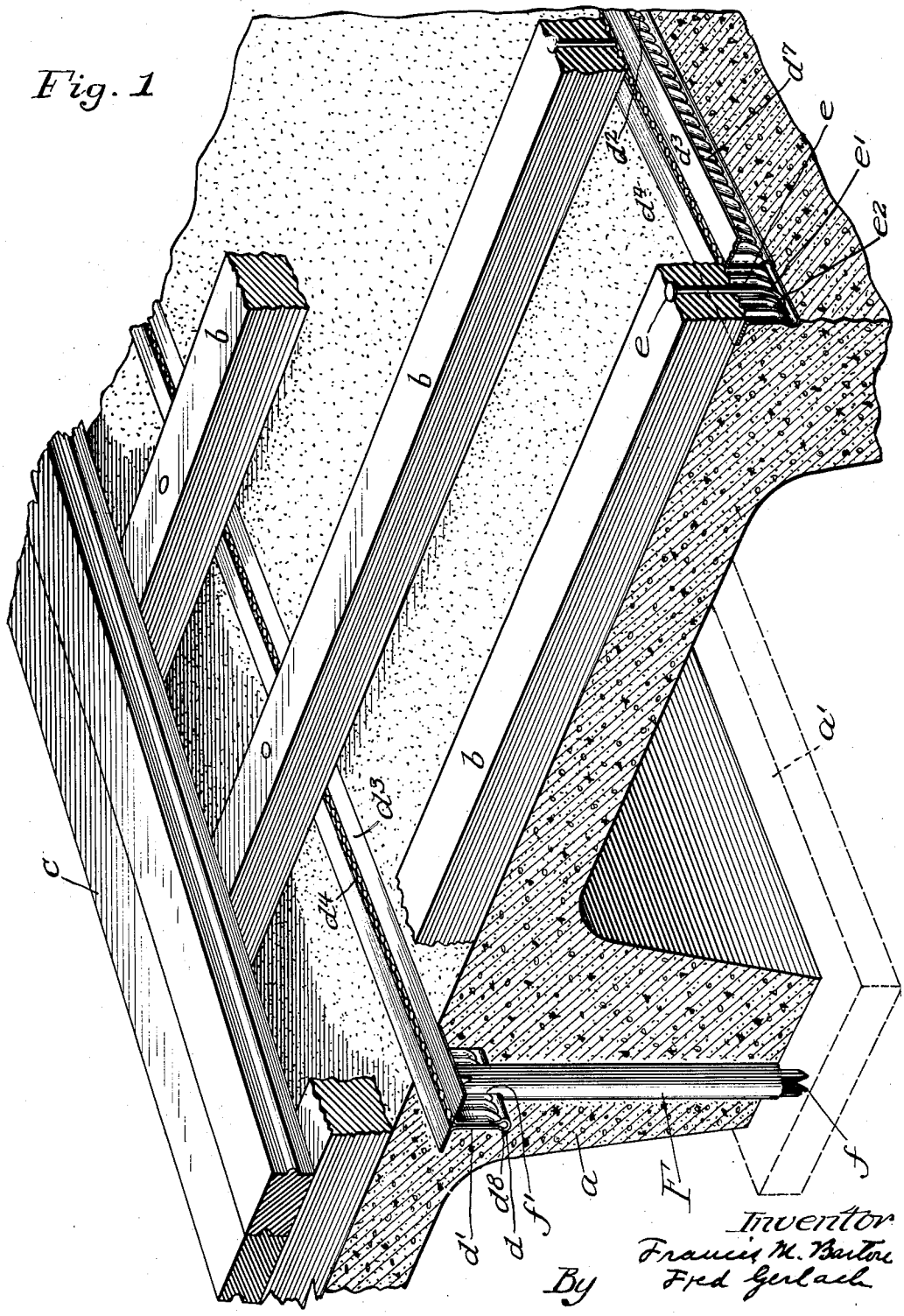
May 26, 1931. F. M. BARTON 1,806,662

METALLIC INSERT FOR CONCRETE STRUCTURES

Original Filed Jan. 7, 1928 2 Sheets-Sheet 1

Fig. 1

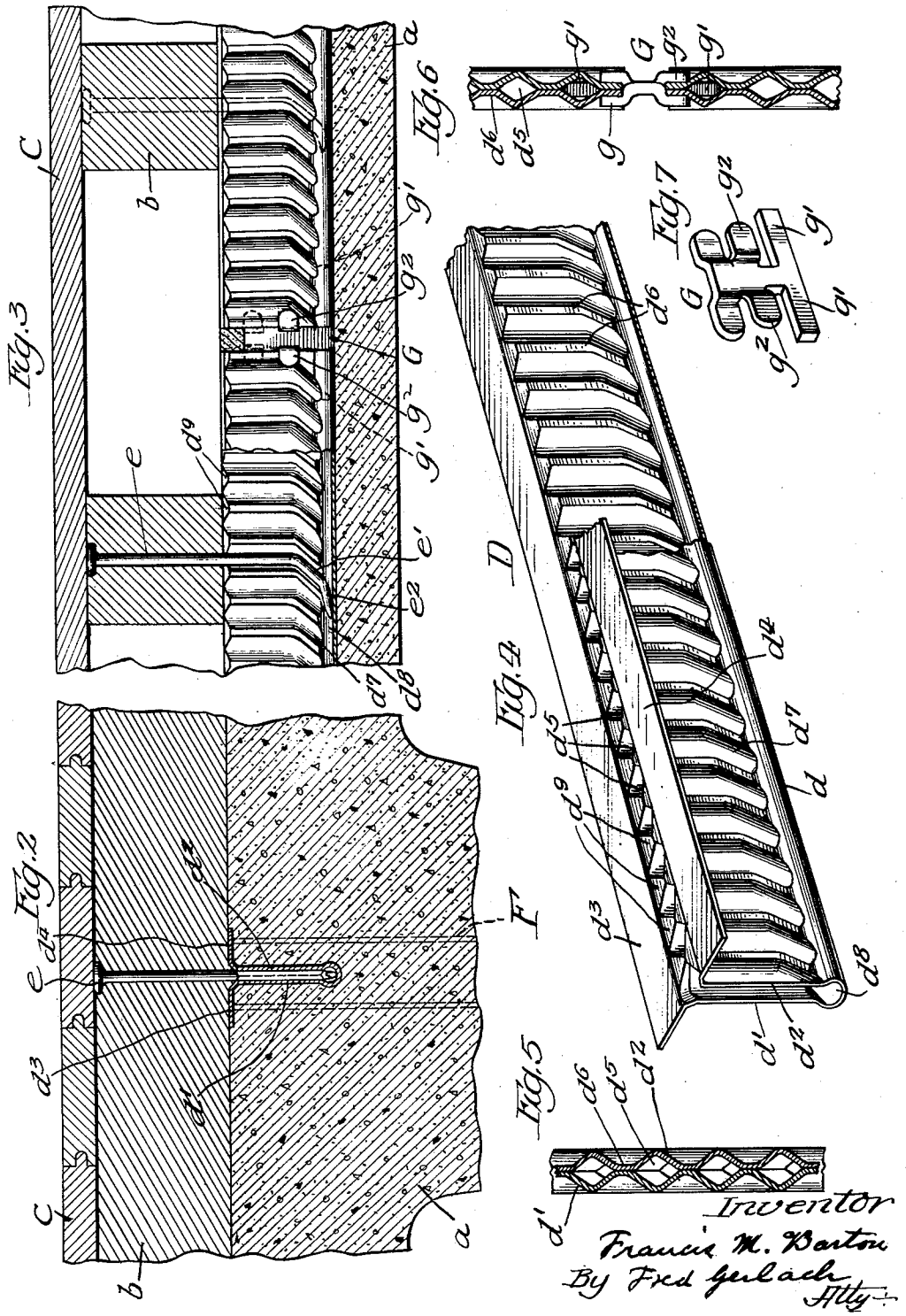


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METALLIC INSERT FOR CONCRETE STRUCTURES

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UNITED STATES PATENT OFFICE

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METALLIC INSERT FOR CONCRETE STRUCTURES

Application filed January 7, 1928, Serial No. 245,084. Renewed April 3, 1931.

The invention relates to metallic inserts for concrete structures.

One object of the invention is to provide an improved insert for use in securing elements to a concrete structure.

Another object of the invention is to provide an improved insert which serves conjointly for the attachment of elements to a concrete structure and has a screed.

A still further object of the invention is to provide an improved metallic insert adapted to receive nails for securing elements to the concrete structure which is provided with means for clinching nails in the structure as they are driven into place.

Other objects of the invention will appear from the description.

The invention consists in the several novel features hereinafter set forth and more particularly defined by claims at the conclusion hereof.

In the drawings: Fig. 1 is a sectional perspective illustrating the invention applied to a concrete floor. Fig. 2 is a section taken longitudinally through one of the nailing strips. Fig. 3 is a section taken transversely of the nailing strips. Fig. 4 is a detail perspective of one of the inserts. Fig. 5 is a horizontal section through one of the inserts. Fig. 6 is a similar section taken at the joint between the ends of aligned inserts. Fig. 7 is a perspective of one of the connecting devices between the inserts.

The improved insert is exemplified as used in a concrete floor a for the attachment of nailing strips or sleepers b on which the floor boards c are laid and secured.

The improved insert D is formed of a single piece of sheet metal bent to form a loop d at its lower end, side walls d' and d^2 extending upwardly from the loop d, and flanges d^3, d^4 extending laterally from the upper ends of the walls d', d^2 respectively. The walls d', d^2 are corrugated to form a series of nail guides or sockets d^5, the corrugations being complementary to form ways or guides for nails e. The inner crowns d^6 of the corrugations in the walls d, d^2 abut against each other so that the outer portions of the corrugations will be spaced apart to receive the nails and to prevent the concrete from collapsing the walls. The upper portions of these corrugations are substantially transverse to the surface of the concrete structure, and their inner portions are oblique, as at d^7, to bend or deflect the portion of the nail adjacent its point obliquely as at e'. The point of the nail is usually of sufficient length, as indicated at e^2, to be deflected transversely into the loop portion d. As a result, a nail driven into one of the sockets d^5 of the insert will be bent or clinched by the inclined portion d^7 of the corrugations, and the point will also be bent into the groove d^8 formed below the inner ends of the inclined portion d^7 of the corrugations, so that the nail will be securely held against withdrawal after it has once been driven into the insert. The flanges d^3 are held in the plane of the face of the concrete structure, so that the insert serves as a screed as well as an insert for securing elements to the concrete structure. Where the corrugations join the flanges d^3, they are bevelled, as at d^9, to direct nails into the recesses or sockets d^5.

In the exemplification of the invention illustrated in Figs. 1 to 3, the insert is supported in the form for the concrete, by any desired number of supports F. Each of said supports is preferably formed of sheet metal bent into U-shape and provided with prongs f adapted to be driven into a part a' of the concrete form. At its upper end, the support F is provided with a notch f' to receive the loop d^8 and walls d', d^2 of the insert, so the sides of the support will straddle the insert and secure it vertically and transversely. By thus supporting the insert with its flanges d^3 in the plane of the surface of the concrete floor a, it serves as a guide in pouring the concrete to the desired level. After the concrete floor has been laid, the nailing strips or sleepers b are laid on the floor and secured thereto by nails e driven through the strips and into the sockets d^5 of the inserts. The wood floor c is then laid and secured on strips b, as well understood in the art. In practice, it is desirable to form the inserts of such length that they can be conveniently handled and

transported, and in order to provide a substantially continuous insert of such length, the contiguous ends of the inserts D are secured together, so they will be longitudinally and vertically aligned by clips or connecting members G. Each of these clips is formed of a single piece of metal, and comprises oppositely extending arms or members g' fitting into the ends of the grooves d^3 of the loop portions d of the inserts, and tongues g^2 adapted to fit against the outer faces of the walls d', d^2 of the contiguous inserts. The clips G are thus insertable into the ends of the inserts, and when the latter are moved together, the clip will form an interlock between them. When the concrete has been poured around the inserts and the clip, they will be permanently and securely interlocked to form a substantially continuous insert composed of convenient lengths.

The invention exemplifies an insert for concrete, which is formed of sheet metal, is adapted to securely retain ends of nails driven into them to secure members to the concrete, is adapted to serve as a screed in laying the concrete, which may be made in convenient lengths and assembled to form a long substantially continuous insert for receiving nails, and which can be produced at a low cost.

While the invention has been illustrated and described in connection with a concrete floor, it is to be understood that it is unable in any concrete structure, such as a joist or a stud, to receive nails for securing lath or other element, as well as nailing strips or sleepers.

The invention is not to be understood as restricted to the details set forth, since these may be modified within the scope of the appended claims, without departing from the spirit and scope of the invention.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent, is:

1. An insert for concrete structures formed of sheet metal and comprising a pair of oppositely facing side walls complementally corrugated to form sockets for attaching devices, the crown portions of the sides between the sockets being arranged in abutting relation.

2. An insert for concrete structures formed of sheet metal and comprising a pair of oppositely facing side walls connected together by an integral longitudinally extending loop and having portions complementally deflected to form between them sockets for attaching devices, the loop being in communication with the sockets and adapted to receive the inner ends of the attaching devices.

3. An insert for concrete structures formed of sheet metal and comprising a pair of oppositely facing side walls complementally corrugated to form between them a plurality of closely positioned sockets for receiving attaching devices, the inner portions of the sockets being angled to bend the attaching devices, the crown parts of the sides adjacent the angled portions of the sockets being arranged in abutting relation.

4. An insert for concrete structures formed of sheet metal and comprising a pair of oppositely facing corrugated side walls, said walls being arranged so that their inner crowns are in abutting relation and their outer crowns form sockets for attaching devices, the inner ends of the walls being connected by an integral longitudinally extending loop forming a transverse groove in communication with the sockets and adapted to receive the inner ends of the attaching devices.

5. An insert for concrete structures formed of sheet metal and comprising a pair of oppositely facing corrugated side walls arranged so that their inner crowns abut and their outer crowns form sockets for attaching devices, the inner ends of the sockets being oblique to bend the attaching devices, the inner ends of the walls being connected by an integral longtiudinally extending loop forming a transverse groove in communication with the sockets and adapted to receive the inner ends of the attaching devices.

6. The combination with a plurality of longitudinally aligned inserts, each comprising a pair of oppositely facing side walls shaped to form a plurality of sockets for receiving attaching devices, and clips adapted to interfit with the side walls adjacent the ends of the inserts to secure said inserts in connected relation.

7. The combination with a plurality of inserts, each formed of sheet metal and comprising corrugated side walls forming sockets for attaching devices, and connected at the inner ends by an integral groove-forming loop, and clips to secure the inserts in connected relation, having arms to enter the grooves adjacent the ends of the loops and tongues to engage the outer faces of the side walls.

Signed at Chicago, Illinois, this 28th day of July, 1927.

FRANCIS M. BARTON.